

# STEAM Education & Leadership Workshops

*Student Activity Lesson Plan - Turning Trash into Treasure - Waste Management & Recycling*

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## Age range

8-11 years old

## Learning objectives

- Understand the concept of waste and the environmental impact of improper waste disposal in Lebanon.
- Learn about different types of waste (organic, recyclable, non-recyclable) and methods of waste management.
- Recognize the importance of recycling and how it helps protect natural resources.
- Investigate how waste reduction and recycling can benefit their local community and the environment.
- Explore STEAM careers related to environmental science and waste management.
- Develop leadership and problem-solving skills by proposing solutions for waste reduction in their community.

## Structure of the lesson

- Introduction to Waste and Recycling (15 minutes)
- Sorting Waste Experiment (20 minutes)
- Community Research and Discussion (25 minutes)
- Brainstorming Solutions (25 minutes)
- Global Connection (15 minutes)
- Reflection and Closing (20 minutes)

## Duration

2 hours

## Note to Educators

### Foster Local Connections

Use examples from the student's own community to make the lesson relatable. Highlight specific waste management challenges or recycling initiatives in Lebanon. This builds a sense of ownership and relevance.

### Encourage Inquiry and Curiosity

Begin with open-ended questions like, "Where do you think trash goes after it leaves your house?" to spark curiosity and engage students in critical thinking.

### Adapt to Varied Learning Styles

Use a mix of visual aids (images of local waste issues), hands-on activities (sorting waste), and discussions to cater to diverse learners. Interactive activities help students understand complex concepts more effectively.

### Create a Safe and Supportive Environment

Reinforce the importance of every student's input during brainstorming and discussions. Encourage participation by validating their ideas and linking them to real-world impacts.

Timing	Facilitator's actions	Students outcomes	Technical notes
<b>0-15 min</b>	<b>Introduction to Waste and Recycling:</b> <ul style="list-style-type: none"> <li>- Start with an engaging question: "Have you ever wondered where your trash goes?"</li> <li>- Discuss the concept of waste, defining key terms like recyclable, compostable, and non-recyclable.</li> <li>- Explain how improper waste disposal affects the environment, using local examples from Lebanon.</li> <li>- Facilitate a class discussion by asking students to share their experiences with waste and recycling.</li> </ul>	<b>Awareness:</b> Gain awareness of different types of waste and their environmental impact. Connect waste management concepts to real-life examples and their community. Participate actively by sharing personal experiences.	Use simple language and visual aids (e.g., printed images) to make concepts easy to understand. Prepare questions ahead of time to keep students engaged.
<b>16-35 min</b>	<b>Sorting Waste Experiment:</b> <ul style="list-style-type: none"> <li>- Explain the activity: students will sort a variety of waste items into categories (recyclable, compostable, non-recyclable).</li> <li>- Provide materials (e.g., paper, plastic bottles, food scraps) and guide students in categorizing them.</li> <li>- Ask reflective questions: "Why do we recycle these items?" "What would happen if we didn't sort our waste?"</li> </ul>	<b>Mastery:</b> Develop critical thinking and categorization skills by analyzing and evaluating waste types.  <b>Agency:</b> Foster curiosity and teamwork as students collaboratively sort waste and reflect on recycling's impact.  <b>Wellbeing:</b> Students feel confident and secure in a collaborative learning environment.	Arrange students into small groups to ensure everyone participates. Use clear labels and separate bins for sorting.
<b>36-50 min</b>	<b>Community Research and Discussion:</b> <ul style="list-style-type: none"> <li>- Present a local waste management challenge (e.g., images of polluted areas or reports of waste problems in Lebanon).</li> <li>- Organize students into groups and provide questions for research: "What types of waste are most common in our community?" "How does waste impact our local environment?"</li> <li>- Facilitate a discussion where groups share their findings and insights.</li> </ul>	<b>Awareness:</b> Build social awareness of systemic environmental challenges in Lebanon.  <b>Connectedness:</b> Collaborate with peers to share perspectives and insights, fostering empathy for local issues.  <b>Mastery:</b> Strengthen research and analytical skills through relevant and meaningful tasks.	Use local examples to make the topic relatable. Provide short articles or factsheets to support student research.
<b>51-75 min</b>	<b>Brainstorming Solutions:</b> <ul style="list-style-type: none"> <li>- Guide students to brainstorm ways to reduce and manage waste. Ideas can include starting a school recycling program or reducing single-use plastics.</li> <li>- Pair students and have them develop a simple action plan for waste reduction, which they present to the class.</li> <li>- Discuss how small actions can lead to significant change.</li> </ul>	<b>Agency:</b> Promote problem-solving and creativity as students lead in developing practical solutions.  <b>Connectedness:</b> Work collectively and support peers, emphasizing shared responsibility for positive change.  <b>Mastery:</b> Engage in productive struggle to create actionable and impactful plans.	Provide prompts to guide brainstorming sessions. Offer examples of achievable waste reduction strategies to inspire students.
<b>76-90 min</b>	<b>Global Connection:</b> <ul style="list-style-type: none"> <li>- Discuss global waste challenges and solutions, such as countries that have effective recycling systems or innovations like biodegradable packaging.</li> <li>- Have students work in pairs to think about how these global solutions could be adapted for their community.</li> <li>- Encourage them to share ideas and discuss their potential impact.</li> </ul>	<b>Connectedness:</b> Foster global awareness by connecting local and global recycling efforts.  <b>Awareness:</b> Explore how systemic challenges and opportunities influence global waste management.  <b>Mastery:</b> Analyze how global strategies can be adapted to the local context.	Use simple examples of global solutions to make the information accessible. Encourage open-ended discussion and creative thinking.
<b>91-120 min</b>	<b>Reflection and Closing:</b> <ul style="list-style-type: none"> <li>- Gather students in a circle for a reflective discussion: "What was the most interesting or surprising thing you learned?"</li> <li>- Ask each student to set a personal waste reduction goal, like using reusable water bottles.</li> </ul>	<b>Wellbeing:</b> Develop a sense of accomplishment and belonging in a supportive environment.  <b>Awareness:</b> Reflect on personal growth, strengths, and purpose in environmental stewardship.  <b>Agency:</b>	Use a talking stick or other method to ensure every student has a chance to speak. Provide encouraging feedback to validate and motivate

	- Wrap up by emphasizing their role as young leaders in environmental protection and expressing optimism for change.	Commit to individual and collective actions for waste reduction.	students.
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